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AMERICAN SOCIETY FOR TESTING AND MATERIALS

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Standard Guide for Flammability and Combustion Testing of Rubber and Rubber- Like Materials¹

This standard is issued under the fixed designation D 4205; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

^{ε1} NOTE—Section 16, Keywords, was revised editorially in December 1994.

1. Scope

1.1 This guide covers the present state-of-the-art test methods for determining the flammability and combustion properties of rubber and rubber-like materials.

1.2 This guide includes standard test methods promulgated by ASTM, NFPA, ANSI, Underwriters's Laboratories, trade associations, and government agencies. It does not include industrial materials specification tests or nonstandard test methods.

1.3 This guide is arranged according to products and systems.

1.4 *This standard should be used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions and should not be used to describe or appraise the fire-hazard or fire-risk of materials, products, or assemblies under actual fire conditions. However, results of these tests may be used as elements of a fire-hazard assessment or a fire-risk assessment which takes into account all the factors which are pertinent to an assessment of the fire hazard or fire risk of a particular end use.*

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use. For specific precaution statements, see the note in Section 3.*

2. Terminology

2.1 The terminology used in the reference test methods is not consistent from test to test. The terms used in a particular test method shall be utilized only in reference to that test method and only in a manner connected with the definition of the terms given in that test method.

3. Significance and Use

3.1 Rubber, like many other materials, is combustible. This guide gives the test methods used in various industries at the present time. These test methods describe the combustibility and burning characteristics of many rubber and rubber-like materials.

3.2 This guide enables the user to select the presently acceptable test methods for the description of the flamma-

bility and combustion of his product.

NOTE: **Warning**—During the course of combustion, gases or vapors, or both, are evolved which may be hazardous to personnel. Adequate precautions should be taken to protect the operator.

4. Source

4.1 The source for the test method is given in Annex A1 and referenced by letter designations in the text.

5. Automotive Test Methods

5.1 D 3675 Test Method for Surface Flammability of Flexible Cellular Materials Using a Radiant Heat Energy Source (L4)

5.2 DOT Motor Vehicle Safety Standard No. 302 Flammability of Materials—Passenger Cars, Multipurpose Passenger Vehicles, Trucks and Buses (I)

5.3 SAE J369 Flammability of Automotive Interior Trim Materials (F)

6. Aviation Test Methods

6.1 FAR 14CFR 25.853, Paragraphs (a), (b), and (c) and Appendix F, Airworthiness Standards—Transport Category Airplanes, Compartment Interiors (J)

6.2 SAE-AMS 3851A Fire Resistance Properties for Aircraft Materials (F)

6.3 SAE-AMS 3852A Fire Resistance Properties for Aircraft Materials (F)

6.4 F 501 Test Method for Aerospace Materials Response to Flame with Vertical Test Specimen (for Aerospace Vehicles, Standard Conditions) (L7)

6.5 F 776 Test Method for Resistance of Materials to Horizontal Flame Propagation (for Aerospace Vehicles, Standard Conditions) (L7)

6.6 F 777 Test Method for Resistance of Electrical Wire Insulation Materials to Flame at 60° (L7)

6.7 F 814 Test Method for Specific Optical Density of Smoke Generated by Solid Materials for Aerospace Applications (L7)

6.8 F 828 Test Method for Radiant Heat Resistance of Aircraft Inflatable Evacuation Slide/Slide Raft Materials (L7)

7. Belting Test Methods

7.1 Flame Tests for Conveyor Belting and Hose (K)

7.2 D 378 Methods of Testing Rubber Belting, Flat Type (L4)

¹ This guide is under the jurisdiction of ASTM Committee D-11 on Rubber and is the direct responsibility of Subcommittee D11.17 on Combustibility.

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